Application Serial No. 10/561,057   PATENT
Reply to office action of December 10, 2008   Docket: CU-4621

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-11 are pending before this amendment. By the present amendment, claim 1 is <u>amended.</u> No new matter has been added.

In the office action (page 2), the examiner objects to claim 1 as containing an informality. In response, the applicants have amended claim 1 in accordance with the examiner's suggestion. Withdrawal of the objection is respectfully requested.

In the office action (page 2), the examiner rejects claims 1 and 5 under 35 U.S.C. §103(a) as being obvious over U.S. Publication No. 2004/0032875 (Bly) in view of U.S. Publication No. 2003/0174662 (Malkamaki).

The applicants respectfully **disagree.**

The presently claimed invention relates to a method for marking a DiffeServ Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (DiffServ) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS).

As stated in lines 1-6 of Paragraph [0018] of the specification, "the relevant protocols of the 3GPP present that the transport network layers of Iu, Iur and Iub interfaces need to support the marking of DSCPs so as to support the guaranteed QoS technology based on the DiffServ in the IP RAN, however, how to realize the DiffServ in the IP RAN is still **a problem to be solved**" (emphasis added). The presently claimed invention is directed to solving this problem.

I. U.S. Publication No. 2004/0032875, Bly, is directed to wholly different subject matter

Bly relates to a system for shaping traffic from a plurality of data streams by using first-in, first-out queues (Bly Abstract). The applicants respectfully submit that subject matter of Bly is wholly different from that of the presently claimed invention.

The presently claimed invention is directed to <u>the wireless access network of the</u>

IP-based universal mobile telecommunication system (UMTS). Claim 1 recites, inter alia:

> --each of said UTRAN comprises a plurality of radio network controllers (RNCs) and one or more Nodes B communicating with said RNC via Iub interfaces, and each Node B comprises one or more cells, and the communication between the RNCs being performed via Iur interfaces--.

However, nowhere in Bly does it teach, disclose or even mention, the wireless access network of the IP-based universal mobile telecommunication system (UMTS) and the components thereof.

In addition, the presently claimed invention relates to --A method for marking a DiffeServ Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (DiffServ) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- as recited in claim 1 of the present invention (emphasis added). In contradistinction, Bly relates to a system for shaping traffic by using first-in, first-out queues. The difference between Bly and the presently claimed invention is in that the object of the present invention is to mark the quality of service while the solution of Bly is to put the streams (which, for example, might be streams that have already been marked) into corresponding first-in, first-out queues.

II. Bly does not disclose the solution of the presently claimed invention

As discussed above, nowhere in Bly does it disclose the technical features of Claim 1, which recites, inter alia:

> --each of said UTRAN comprises a plurality of radio network controllers (RNCs) and one or more Nodes B communicating with said RNC via Iub interfaces, and each Node B comprises one or more cells, and the communication between the RNCs being performed via Iur interfaces--.

In the Office Action (page 3-4), the examiner states that FIGs. 2 and 3 of Bly disclose the following features of Claim 1:

> --in the outgoing direction of the Iub interfaces at the Node B side, classifying all the uplink Iub interface data streams generated by the Node B into DCH FP data frames, RACH/CPCH FP data frames, and Node B Application Part (NBAP) signaling and Operation & Maintenance (O&M) data streams, and assigning and adjusting the priorities of the classified data streams according to the principles

Application Serial No. 10/561,057   PATENT
Reply to office action of December 10, 2008   Docket: CU-4621

for optimizing the QoS and radio resources--

--classifying the transmitted data into: uplink DCH FP data frames transparently forwarded from the Iub interfaces; uplink RACH/CPCH FP data frames from the Iub interfaces, ..., and assigning and adjusting the priorities of the classified data streams according to the principles for optimizing the QoS and radio resources--

and

--downlink DCH/HS-DSCH FP data frames transparently forwarded from the Iur interfaces; downlink DSCH FP data frames from the Iur interfaces, ... directly transmitted to the Node B; and NBAP signaling and O&M data streams, and assigning and adjusting the priorities of the classified data streams according to the principles for optimizing the QoS and radio resources--.

It should be noted that, it is explicitly recited in Claim 1 that the limitation of --in the outgoing direction of the Iub interfaces at the Node B side...-- is directed **specifically to --In the outgoing direction of the Iub interfaces at the Node B side--**.

It is also explicitly recited in Claim 1 that the feature of Claim 1 --classifying the transmitted data into: uplink DCH FP data frames transparently forwarded from the Iub interfaces...-- is **specifically** directed to **--in the outgoing direction of the Iub interfaces at the RNC side--**.

It is also explicitly recited in Claim 1 that the feature of Claim 1 --downlink DCH/HS-DSCH FP data frames transparently forwarded from the Iur interfaces...-- is specifically directed to --**in the outgoing direction of the Iur Interface at the RNC side--**.

As illustrated in Figure 2 of the present application, the Node B and the RNC are two different and distinct devices. It is well known to a person having skill in the art that each of these two devices have a different structure and function. For example, as stated in lines 15-20 of Paragraph [0003] of the specification, "the RNC 4 usually performs the PDCP (Packet Data Convergence Protocol), RLC (Radio Link Control), and MAC (Medium Access Control) and other functions in the radio interface protocols, while the Node B 5 performs the physical layer function in the radio interface protocols". Moreover, the Iub and Iur interfaces are also well known in the prior art, wherein, as stated in lines 11-13 of Paragraph [0003] of the present application, "the RNCs are connected to each other via Iur interfaces, and one RNC 4 is connected to one or more

Page 10 of 15

Application Serial No. 10/561,057   PATENT
Reply to office action of December 10, 2008   Docket: CU-4621

node(s)B 5 (Node B) via lub interfaces".

However, FIGs. 2 and 3 of Bly merely relate to <u>one single</u> shaping means, i.e.,
the traffic shaping queuing stage 22 in Figure 2 or the shaping engine 28 in Figure 3. If
the shaping means of Bly corresponds to the Node B of the presently claimed invention,
then it cannot correspond to the RNC since both the Node B and the RNC are separate
devices as stated above. That is, the shaping queuing stage 22 or the shaping enginge
28 of Bly can at best represent **only a single** device, not both. In addition, nowhere in
Bly is there mentioned <u>the lub and lur interfaces</u>.

In the Office Action, the examiner states that "all the names of data frames did
not give any specific definitions, thus they just labels to represent different type of data
frames" (office action pages 3-4); "the interface before forward the data frame is Fig. 3,
#32, in fact it is inherent, that any node has an interface to forward packet" (office action
pages 4-5); "in addition, all the data frames are electrical signal thus it can't be seen by
human eyes, thus frame are transparently forwarded" (office action page 5).

The applicants respectfully submit that the examiner has misconstrued the
limitations of claim 1 in light of the citations above. The various data frames recited in
the present invention have specific meanings and functions in the technical field of
telecommunication. For example, as stated in lines 34-37 of Paragraph [0006] of the
specification, "For detailed description about the lur/lub interface FP data frame
protocols, TS25.427, TS25.425 and TS25.435 serial protocol documents of the 3GPP
can be consulted".

The sign "32" in Figure 3 of Bly merely indicates linked lists which define
"shaping queues" (as described in Paragraph [0024] of Bly), rather than the lub and lur
interfaces, or even an interface at all. In addition, "any node has an interface to forward
packet" does not mean, in any way, that any interface is the lub and lur interfaces in the
wireless access network.

"Transparently forward" is a well-known term in the field of telecommunication,
which means that the data is forwarded by a certain node without any additional
processes, and does not mean, in any way, that the data frame "<u>can't be seen by
human eyes</u>".

II. U.S. Publication No. 2003/0174662, Malkamaki, does not disclose the solution of the presently claimed invention

Malkamaki relates to a method for transmitting control information such as acknowledgement messages in cellular telecommunication network.

Nowhere in Malkamaki does it mention --A method for **marking** a DiffeServ Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (DiffServ) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- as in claim 1 of the present invention. That is, even if the frame names of--medium access control (MAC) layer service data units (SDU) processed by the MAC layer functional entity (MAC-c/sh) forming the corresponding upward lur interface RACH/CPCH FP data frames; downlink lur interface FP data frames generated by the RNC as a SRNC and transmitted to a Drift Radio Network Controller (DRNC); and radio network sub-system application part (RNSAP) signaling streams-- are mentioned in Malkamaki, Malkamaki still would not teach the features of claim 1 that classifies these frames and --assigning and adjusting the priorities of the classified data streams according to the principles for optimizing the QoS and radio resources-- as in claim 1 of the present invention.

In addition, Malkamaki discloses a mobile station (MS) 200 and a network element (NE) 220, wherein the network element corresponds to a base station (Malkamaki [0038]). However, the interface between MS and NE could not be construed as equivalent to the lub and lur interfaces. As illustrated in FIGs. 1 and 2 of the present application, the lub interface is the interface between the radio network controller and the Node B, the lur interface is the interface between the radio network controllers, and the interface between the UMTS wireless access network and the user, i.e., the mobile station MS, is the Uu interface, all of which are well known in the prior art. To a person having skill in the art, the mobile station MS in Malkamaki corresponds to, at most, the user equipments (UE) in the present application, rather than the Node B. Therefore, the interface between the MS and UE in Malkamaki corresponds to, at most, the Uu interface mentioned in the present invention. However, the present invention is not directed to the Uu interface.

Accordingly, with regards to the above, the applicants respectfully submit that Malkamaki does not disclose the solution of the present invention, i.e., the solution set forth in Claim 1.

Therefore, the applicants respectfully submit that neither Bly nor Malkamaki, whether considered individually or in combination, teach or suggest all the limitations of claim 1 for the at least the reasons set forth above. Accordingly, the applicants respectfully request withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

In the office action (page 13), the examiner rejects claims 2, 6-8 and 10 under 35 U.S.C. §103(a) as being obvious over Bly in view of Malkamaki and further in view of U.S. Patent No. 6,618,378 (Giroux).

III. US Patent No 6,618,378, Giroux does not disclose the solution of the presently claimed invention

Giroux relates to a method for carrying multiple classes of service over a single connection or channel in a connection oriented communications network, for instance an Asynchronous Transfer Mode (ATM) network.

Nowhere in Giroux does it mention --A method for **marking** a DiffeServ Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (DiffServ) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- as in claim 1 of the present invention (emphasis added).

More specifically, Giroux does not mention --the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- at all. Nor does Giroux mention a radio network controller, Node B, Iur interface and Iub interface. Giroux is silent as to the aforementioned elements of claim 1.

Giroux does not mention anywhere in the disclosure, how to adjust and handle the respective channels in the wireless access network of the IP-based universal mobile telecommunication system (UMTS) and to mark a DiffeServ Code Point (DSCP). That is, Giroux does not disclose the solution of Claim 1 and provides absolutely no teaching of any such related solution.

Page 13 of 15

Application Serial No. 10/561,057   PATENT
Reply to office action of December 10, 2008   Docket: CU-4621

In the office action (page 22), the examiner rejects claims 3-4, 9 and 11 under 35 U.S.C. §103(a) as being obvious over Bly in view of Malkamaki and further in view of Giroux and U.S. Publication No. 2003/0093739 (Han).

III. U.S. Publication No. 2003/0093739, Han, does not disclose the solution of the presently claimed invention

Han relates to a method for encoding a status PDU, including receiving AMD PDU, determining whether or not there are missing AMD PDU, and calculating an error-checking range.

Han does not mention --A method for **marking** a DiffeServ Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (DiffServ) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- as in claim 1 of the present invention (emphasis added).

More specifically, Han does not mention --the wireless access network of the IP-based universal mobile telecommunication system (UMTS)-- at all. Nor does Han mention a radio network controller, Node B, Iur interface and Iub interface at all. Han is silent as to the aforementioned elements of claim 1.

Han does not mention anywhere in the disclosure, how to adjust and handle the respective channels in the wireless access network of the IP-based universal mobile telecommunication system (UMTS) and to mark a DiffeServ Code Point (DSCP). That is, Han does not disclose the solution of Claim 1 and provides absolutely no teaching of any such related solution.

Accordingly, the applicants respectfully submit that neither Bly, Malkamaki, Giroux, nor Han, whether considered invidually or in combination, teach suggest the presently claimed invention for at least the reasons set forth above. Therefore, the applicants respectfully request withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

As to claims 2-11, the applicants respectfully submit that these claims are also allowable at least since they depend from independent claim 1, which is now considered to be in condition for allowance for the reasons set forth above. Withdrawal of the

Application Serial No. 10/561,057   PATENT
Reply to office action of December 10, 2008   Docket: CU-4621

outstanding rejections and indication of allowable subject matter is respectfully requested.

For the reasons set forth above, the applicants respectfully submit that claims 1-11, pending in this application, are in condition for allowance over the cited references. Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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